

CLASSIFICATION \_\_\_\_\_

SHEET 1 OF

TITLE

ACCEPTANCE TEST PROCEDURE FOR LIGHT TABLE MLT-1540

USED ON

MLT-1540

DATE

30 October 1970

REVISION  
(See last sheet  
for record)

STAT

SERIAL NUMBER

Preproduction Item

TEST BY -

STAT

DATE

12 November 1970

TIME

1435 - 2045

Declass review by NGA/DoD

This item has successfully performed to all of the requirements  
as itemized and checked in the body of this procedure.

Date

Signature

PREPARED BY

DATE

APPROVED BY

DATE

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## 1.0 PURPOSE

The purpose of the Acceptance Test Procedure is to verify that the Modular Light Table, MLT-1540, meets its functional and performance requirements.

## 2.0 EQUIPMENT REQUIRED

2.1 MLT-1540 complete per ☐ Drawing No.

2.2 Test film as follows:

9.5 inch wide, 4 mil base, 1,000 foot roll ✓

6.6 inch film, 1,000 foot, 2 rolls X

5 inch film, 1,000 foot, 2 rolls

70mm film, 1,000 foot, 2 rolls

2.3 Empty take-up spools

(This should be commensurate with the number of films required as listed above.)

2.4 Vibration target X

2.5 Stop watch ✓

2.6 GFE foot lambert meter (Weston Model 759) ✓

## 3.0 ACCEPTANCE TEST

Completion and verification of each of the following items shall be noted by the inspector's stamp or initials in the space provided.

## 3.1 Mechanical and visual inspection

The MLT shall be carefully examined to determine conformance to the requirements of ☐ Drawing ; Outline Drawing. Moving parts such as covers, latches and gear mechanisms shall be checked to assure proper fit and operation without sticking or binding. Quality of workmanship, proper materials and finishes, nameplate installation, etc. shall be verified.

*Special  
710.*

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- 3.2 Mark off table surfaces with china markers to show restricted area using the plastic template provided. *unregulated - 115-120*
- 3.3 Connect table to regulated 117 VAC, 25 amp power source. *✓*
- 3.4 Turn lights on to max intensity, both sides.
- a) Record time turned on. *225*
- 3.5 Operate the elevating mechanism.
- a) Note max and min distance from floor. *Min 22"*  
(Max = 40" Min = 22") *Adj. switch 39 7/8 40"*
- 3.6 Check operation of manual hand elevation for smoothness of operation. *✓*
- 3.7 Check film rollers for smoothness of operation - See notes and surface. *✓*
- 3.8 Check that the coating on bottom cover is in place and smoothly applied. *✓*
- 3.9 Check that wheel locks operate properly, both for rotation and rolling. *✓*
- 3.10 Mount two 1,000 ft rolls of 70mm film on table, dual web configuration, emulsion up. *1,500, 1,000, No 1000 Take-up reel. 500 ft.*
- a) Note time to rewind completely, both rolls at same time, in opposite direction. ( $\leq 3$  minutes) *40 inches 1.2000. 1 min 19 sec.*
- b) Note tracking characteristics. *OK*
- c) Note effect on stationary web when other moves and stops rapidly. Check both webs. (No interreaction) *OK*
- d) Measure min speed on front roll only. (Smooth control from 0 to 1 inch/sec) *9" 0.098 in/sec*
- 3.11 Mount two 1,000 ft rolls of 70mm film on table, dual web configuration, emulsion down.
- a) Note time to rewind completely, both rolls at same time, in opposite direction. ( $\leq 3$  minutes) *Waived*
- b) Note tracking characteristics. *This date*

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- c) Note effect of stationary roll when other moves and stops rapidly. Check both webs. (No interaction)

✓

- 3.13 Mount two rolls 5" film (1,000 ft) on table, split vertical mode, emulsion up and emulsion down.

✓

- a) Operate to insure split vertical capability.

✓

- 3.14 Mount 1,000 ft roll 9 1/2" film, emulsion up.

- a) Note time to completely rewind. ( $\leq 3$  min.)

*2 min 56 sec. 2 min 15 sec.*

- b) Operate take-up mechanism. Note max capability. ( $\geq 76$  inches)

*77.75"*

- c) Scan slowly with loop take up. Note tracking problems.

*OK*

- d) Start and stop rapidly from full speed (no loop). (No slack loops or excessive tension)

✓

- 3.15 Operate tilt mechanism.

- a) Note that full tilt provides  $15^{\circ} \pm 1^{\circ}$  slope.

✓

- b) Note that horizontal table is level  $\pm 1^{\circ}$ .

✓

- 3.16 Operate carriage motion system with table horizontal, and weight of optics on carriage.

*X*

Set friction locks.

- a) Note force required to move carriage with locks set. ( $\geq 10$  lbs)

✓

Release friction locks.

- b) Check operation of adjustable stops, "x" direction.

✓

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*Cord interfaces ↓*

c) Check that "Y" motion cover full depth of the formats. ✓

d) Note max speed, x direction. ( $\geq .5$  in/sec) $\frac{10}{22.8}$ 

0.439

e) Note min speed, x direction. (FULL STOP)

 $\frac{.125}{10.9}$ 

0.01153

f) Note max speed, y direction ( $\geq .5$  in/sec) $\frac{10}{19.4}$ 

0.515

g) Note min speed, y direction. (FULL STOP)

 $\frac{.125}{5.8}$ 

0.02155

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i) Note force required to move carriage with motors disengaged x and y direction. ( $\leq 4$  lbs both axis)

1.8 X max

4.2 Y max

3.17 Operate carriage motion system with table tilted, and weight of optics on carriage.

a) Note max speed, x direction. ( $\geq .5$  in/sec) $\frac{10}{22.4} = 0.446$ 

b) Note min speed, x direction. (FULL STOP)

 $\frac{.125}{10.3}$ c) Note max speed, y direction. ( $\geq .5$  in/sec) $\frac{10}{17.5} = 0.571$ 

d) Note min speed, y direction. (FULL STOP)

 $\frac{.125}{9.0} = 0.01389$ 

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f) Check operation of "fail-safe" system for Y-direction movement. ✓

3.18 Mount dial indicator on optics holder with weight of optics attached.

a) Note smoothness of operation from action of indicator. as the microscope is raised and lowered throughout its range. See 22.6

3.19 Check parallelism of optics carriage to format surfaces with dial indicator.

a) Note maximum deviation. (Within .015 inches)

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3.20 Check collimation of pod to both format surfaces. This must be done with weight of Zoom 240R with 28 Rhomboids on carriage.

a) Note collimation deviation, if any. (10 minutes max x & y) \_\_\_\_\_

3.21 Check illumination on left format surface.

a) Note time. Check that 30 minutes minimum have elapsed since 3.4 a). \_\_\_\_\_ ✓

b) Note max illumination at format center.  
( $\geq 3,000$  ft lamberts)

3125  
Max illumination

✓

Set right format to minimum.

c) Note deviation from previous max. (100 ft Lamberts)

125

Return right format to maximum.

Set illumination at left center to 3,000 fl.

d) Note minimum illumination over entire surface. Spec 55%

2100  
Entire surface

✓

e) Note minimum illumination in restricted area. Spec 35%

2200  
Restricted Area

✓

Set illumination at minimum.

f) Note reading at format center.  
( $\leq 200$  ft LAMBERTS)

125  
MIN ILLUMINATION

✓

Set right illumination at minimum.

g) Note deviation from previous minimum. ( $\leq 100$  ft Lamberts)

0  
Deviation

✓

Return illumination, both sides, to max.

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## 3.22 Check illumination on right format surface.

- a) Note time. Check that 30 minutes minimum have elapsed since 3.4 a).

- b) Note maximum illumination at format center.  
( $\geq 3,000$  ft lamberts)

3050  
Max illumination

✓

Set left format to minimum.

- c) Note deviation from previous maximum. ( $\leq 100$  ft lamberts)

150  
Deviation

✓

Return left to max.

Set illumination at center of format to 3,000 fl.

- d) Note minimum illumination over entire surface.

2200  
Entire surface

✓

- e) Note minimum illumination in restricted area.

2400  
Restricted area

✓

Set illumination at minimum.

- f) Note reading at format center.  
( $\leq 200$  FT LAMBERTS)

100  
MIN ILLUMINATION

✓

Set left illumination at minimum.

- g) Note deviation from previous minimum. ( $\leq 100$  ft lamberts)

0  
Deviation

✓

- 3.23 a) Note difference between 3.21 b) and 3.22 b).  
( $\leq 100$  ft lamberts)

125

## 3.24 Observe light sources for evidence of flicker.

- a) Set both at max. Report flicker, if any.

✓

- b) Set both at minimum. Report flicker, if any.

✓

- 3.25 Operate film masking system. Insure that lights  
extinguish in proper order.